

ANALYTICS OF VERY-VOLATILES, VOLATILES AND SEMI-VOLATILES

MULTI-DIMENSIONAL SCREENING MODEL FOR EXTRACTABLES AND LEACHABLES TESTING

Assessment and mitigation of all substances that migrate into or interact with the packaged product poses a substantial challenge to supervisory authorities and manufacturers:

- **Comprehensive analytical approach** for identification and quantification of **extractables** (worst case scenario) and **leachables** (a.o. in complex formulations with high lipid content) is available
- **Tailored extraction and sample preparation techniques together with optimized ionisation techniques using tandem-mass spectrometry** are applied to meet compound specific thresholds < 5 ppb

PHARMACEUTICAL PRODUCT DEVELOPMENT

- **Stability studies**
- Characterization of **API related degradation products** and process impurities including **residual solvents** with regard to the production process of the drug product
- **Binding studies** of diverse matrices suitable for **highly volatile APIs**

LIPID PROFILING

- Fatty acid screening targeting **36 free and esterified saturated or unsaturated fatty acids** in diverse **biological matrices** including cell lysates, incubation media, blood, and human milk samples together with **food products** and **pharmaceutical applications**
- **Plasmalogens** (etherlipids) associated e.g. with Alzheimer's disease, down syndrome and Zellweger syndrome

AROMA PROFILING AND BIOACTIVITY TESTING

- Identification of **product specific aroma compounds and off-flavors**
- **In vitro model** to investigate the **structure specific immune modulatory activity** on the **regulatory level and protein level**
- Verification of **bioavailability of functional food additives** in order to **claim their proposed physiological activity**

RESOURCES

- **Agilent 7890 GC** (MMI mid/endpoint-BF) with **Agilent 7010 tandem-EI/CI mass spectrometer** with **PAL 3 RSI** for injection/HS/SPME
- **Agilent 7890 GC** (MMI mid/endpoint-BF) with **Agilent 5977 EI/CI mass spectrometer**
- **Agilent 6890 GC, Agilent 5973 MS** with **Agilent 7697 headspace sampler**
- **Agilent 6890 GC-FID** with **Agilent 7697 headspace-sampler**
- **Sample preparation tool:** glove box, precision balances, centrivac, distillation equipment

The comprehensive portfolio of the laboratory is available to students, lecturers and numerous partners from industry and education.

CONTACT

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